REMARKS

Claims 9-28 were pending. Claims 9-28 have been cancelled. New claims 29-39 have been added. No new matter has been introduced thereby.

Figure 1 has been objected to for certain informalities, which have been corrected. Applicants have attached a redlined version of Figure 1 for the Examiner's review. Such redlined version of Figure 1 overcomes the objections. Figure 5 is also objected to for an informality. Such informality has been corrected in the redlined version, which is attached. Accordingly, Figures 1 and 5 are now free from any objections.

The Examiner also uncovered a few minor informalities with the specification. As noted above, such informalities have been corrected by way of amendment. No new matter has been introduced thereby and such amendment has been made without prejudice to the claims herein.

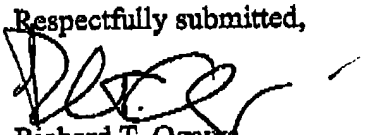
Claims 9-18, 20, 23-24, and 27-28 were rejected under 35 U.S.C. §112, first paragraph. Claims 9-18, 24, and 27-28 were rejected under 35 U.S.C. §112, second paragraph. Claims 19-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Oshima et al. (U.S. Patent No. 6,251,754) in view of Moriceu et al. (Hydrogen Annealing Treatment Used to Obtain High Quality SOI Surfaces, IEEE International SOI Conference, Ocotber 1998, pp. 37-38). Claims 9-11, 13, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Oshima in view of Moriceau and further in view of Benton. All claims have been canceled without prejudice for renewal.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Paragraph beginning Page 11, line 9:

B2

In preferred embodiments, the present substrate undergoes treatment using a combination of etchant and thermal treatment in a hydrogen bearing environment. In a specific embodiment, the etchant is HCl gas or the like. The thermal treatment uses a hydrogen etchant gas. In some embodiments, the etchant gas is a halogenated gas, e.g., HCl, HF, HI, HBr, SF_6, CF_4, NF_3, and CCl_2F_2.[.] The etchant gas can also be mixed with another halogen gas, e.g., chlorine, fluorine. The thermal treatment can be from a furnace, but is preferably from a rapid thermal processing tool such as an RTP tool. Alternatively, the tool can be from an epitaxial chamber, which has lamps for rapidly heating a substrate. In an embodiment using a silicon wafer and hydrogen gas, the tool can heat the substrate at a rate of about 10 Degrees Celsius and greater or 20 Degrees Celsius and greater, depending upon the embodiment.

Paragraph beginning Page 11, line 27:

B3

Still further in other embodiments, the present substrate undergoes a process of hydrogen treatment or implantation before thermal treatment **[purposes]** processes. Here, the substrate, including the detached film, is subjected to hydrogen bearing particles by way of implantation, diffusion, or any combination thereof. In some embodiments, where hydrogen has diffused out from the initial implant, a subsequent hydrogen treatment process can occur to increase a concentration of hydrogen in the detached film. The present hydrogen treatment process can occur for substrates made by way of the controlled cleaving process, Smart Cut™ process of Soitec SA, and others, which may form an uneven or rough surface finish after detachment. A finished wafer after smoothing or surface treatment is shown in Fig. **[16]** 5. Here, the finished wafer includes a substantially smooth surface 2601, which is generally good enough for the manufacture of integrated circuits without substantial polishing or the like.

IN THE CLAIMS:

29. A dry method for finishing SOI substrates, said method comprising:

providing an SOI substrate comprising a cleaved surface, said cleaved surface having a first surface roughness value;

increasing a temperature of an environment associated with said cleaved surface to about 1,000° Celsius and greater; and

contacting said cleaved surface with a hydrogen bearing environment at least when said temperature of said environment is about 1000° Celsius and greater to reduce said first surface roughness value by at least about eighty percent to a second surface roughness value, said hydrogen bearing environment including at least an HCL gas and a hydrogen gas;

whereupon the cleaved surface having the second roughness value is substantially planarized.

30. The method of claim 29 wherein the increasing the temperature is provided at a rate of about 10 Degrees Celsius per second and greater.

31. The method of claim 29 wherein said first surface roughness value is reduced by at least about ninety percent to the second roughness value.

32. The method of claim 29 wherein said HCl gas and said hydrogen gas are a ratio (HCl:H2) of about 0.001 to 30.

33. The method of claim 29, wherein said hydrogen gas and the HCl gas interact with said surface to reduce said surface roughness value.

34. The method of claim 29 wherein said first surface roughness value of said surface is reduced in a thermal processing chamber.

35. The method of claim 29 wherein cleaved surface is provided by a controlled cleavage process.

36. The method of claim 29 wherein said substrate is a silicon wafer.

37. The method of claim 29 wherein said environment is said surface.

38. The method of claim 29 wherein said environment is a process chamber wherein said substrate is provided.

39. The method of claim 29 wherein the environment is maintained at a pressure of about 1 atomsphere.